



Australian Government

ICTPRG553 Create and develop REST APIs

Release: 2

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Modification History

Release	Comments
Release 2	This version first released with ICT Information and Communications Technology Training Package Version 7.2. Version created to correct a typographical error in the performance evidence.
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to create and implement representational state transfer (REST or RESTful) application program interfaces (APIs) in order to request and manipulate data from data sources.

The unit applies to those working as senior software developers, senior back end developers or full stack developers, and responsible for managing information and communications technology (ICT) in small-to-large enterprises.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Programming

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Create new project	1.1 Establish need and application of REST APIs according to business needs 1.2 Review, evaluate and select REST API framework according to required programming language and business needs 1.3 Review, evaluate and select required integrated development environment (IDE) 1.4 Create project using IDE according to business needs

ELEMENT	PERFORMANCE CRITERIA
	1.5 Configure and implement RESTful API in project
2. Build REST API endpoints	2.1 Build REST API end point using GET method and return a collection of records 2.2 Build REST API endpoint and return a single record 2.3 Configure REST API endpoint using POST and PUT method according to function 2.4 Build REST API endpoint using DELETE method 2.5 Test methods and confirm response status code reflects function of REST API according to business needs
3. Enable cross origin resource sharing (CORS)	3.1 Update REST API GET, POST, PUT and DELETE endpoints and confirm that simple cross-origin requests are allowed 3.2 Review and select REST API client and test simple CORS requests 3.3 Update REST API GET, POST, PUT and DELETE endpoints and allow pre-flight cross-origin requests using OPTION method 3.4 Test CORS for pre-flight request
4. Secure REST API	4.1 Review, evaluate and select method for securing REST API according to business needs 4.2 Implement authentication and authorisation for securing REST API endpoints
5. Finalise REST API	5.1 Review and evaluate industry tools and conventions for documenting REST API endpoints according to business needs 5.2 Develop documentation for REST API endpoints 5.3 Validate documentation against REST API endpoints and submit to required personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Reading	- Critically analyses documentation, instructions and data from a variety of sources and records, and consolidates information, in order to determine requirements and steps forwards - Identifies and interprets technical material to determine and confirm job, business and systems requirements

SKILL	DESCRIPTION
Writing	• Demonstrates sophisticated writing skills using specialised language, technical language and scripts and required conventions to document work
Problem solving	• Applies systematic and analytical decision- making processes for complex situations and bug code • Uses nuanced understanding of context to recognise anomalies and subtle deviations to normal expectations, focusing attention and remedying problems as they arise
Self-management	• Takes full responsibility for following policies, procedures and legislative requirements, and identifies organisational implications of new legislation or regulation, including privacy and data use legislation • Monitors progress of plans and schedules, and reviews and changes them, to meet new demands and priorities • Investigates new and innovative ideas, as a means by which to continuously improve, work practices and processes through consultation, formal and analytical thinking
Technology	• Uses complex scripts and tools required within complex systems, applications, operation systems, the internet and required software and hardware components • Uses cyber security procedures and techniques to maintain data security, and systems and application integrity

Unit Mapping Information

No equivalent unit. New unit.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTPRG553 Create and develop REST APIs

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- build and test at least one representational state transfer (REST or RESTful) application program interface (API) endpoint and confirm functionality.

In the course of the above, the candidate must:

- enable cross origin resource sharing (CORS)
- use GET, POST, PUT, DELETE and PATCH methods
- secure REST API with authentication and authorisation
- document REST API work.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- features and different applications that applies to the HTTP network protocol
- features and anatomy of REST API HTTP request and response, including HTTP headers and body
- language used in programming language
- HTTP GET, POST, PUT and OPTIONS methods and features of each
- CORS methodology.

Assessment Conditions

Skills in this unit must be demonstrated in a workplace or simulated environment where the conditions are typical of those in a working environment in this industry.

This includes access to:

- client/user agent
- integrated development environment (IDE)
- the internet, including connectivity
- required hardware, software and applications.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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